

REMARKS

Claims 5-13 are pending in the present application.

Claim Rejections-35 U.S.C. 103

Claims 5-7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Takada et al. reference (U.S. Patent No. 6,236,725), in view of the Yoshida et al. reference (Japanese patent publication No. 7-264279). This rejection is respectfully traversed for the following reasons.

The echo canceller of claim 5 includes in combination an attenuator "that attenuates the sending signals containing echo noise so that an amplitude level of the echo noise matches an amplitude level of the pseudo echo signals, and that provides the attenuated sending signals to said subtracter as the sending signals for subtraction". Applicants respectfully submit that the prior art as relied upon by the Examiner does not make obvious these features.

The Examiner has acknowledged that the Takada et al. reference does not teach the use of an attenuator. In order to overcome this acknowledged deficiency of the primarily relied upon prior art, the Examiner has characterized microphone amplifier 115 in Fig. 1 of the Yoshida et al. reference as an attenuator. The Examiner has alleged that "There is **a great possibility and obviously** that the controller (113) controls the amplitude of the signal produced by the ATT/AMP (115; noted that the gain of the amp 115 can be reduced (attenuated) or increased (amplified) between different levels, e.g.,

from a higher level to a lower level or vice versa; page 4 of 6, paragraphs 30 and 32, detailed description section) to substantially match with the pseudo echo signal produced by ADF (112a), so that echo signal can be canceled completely" (our emphasis added).

The Examiner has alleged that it would have been obvious to utilize the teaching of the Yoshida et al. reference into the teaching of the Takada et al. reference, in order to control the amplitude of the signal produced by the ATT/AMP (115) to substantially match with the pseudo echo signal produced by the ADF (112a), so that the echo signal can be canceled completely. Applicants respectfully disagree for the following reasons.

As emphasized in the paragraph bridging pages 6-7 of the Amendment dated July 9, 2003, **element 115 in Fig. 1 of the Yoshida et al. reference is an amplifier, not an attenuator.** Particularly, microphone amplifier 115 in Fig. 1 of the Yoshida et al. reference has two kinds of **gain settings** based on the GAIN CONT signal as provided from controller 113. A first gain setting corresponds to speaker amplifier 108 and speaker 109, and the second gain setting corresponds to receiver amplifier 110 and receiver 111. Accordingly, once the gain settings are set by controller 113, amplifier 115 accomplishes **an amplifying function.**

Accordingly, by definition microphone amplifier 115 of the Yoshida et al. reference is not an attenuator, and thus cannot be interpreted as the attenuator of claim 5. That is, since microphone amplifier 115 of the Yoshida et al. reference by definition amplifies the microphone sending signal, microphone amplifier 115 **does not attenuate**

sending signals containing echo noises "so that an amplitude level of the echo noise matches an amplitude level of the pseudo echo signals", and **does not provide attenuated sending signals** to a subtracter as sending signals for subtraction, as featured in claim 5.

As noted above, in the current Office Action the Examiner has apparently relied upon paragraphs [30] and [32] of the English translation of the Yoshida et al. reference (provided along with the current Office Action) as support for the interpretation of microphone amplifier 115 as an attenuator. However, paragraphs [30] and [32] of the Yoshida et al. translation describe a **gain** control signal GAIN CONT for adjusting gain of microphone amplifier 115, and two steps of gain settings. Contrary to the Examiner's apparent assertion, paragraphs [30] and [32] of the Yoshida et al. translation do not describe or even remotely suggest attenuation.

The Examiner has apparently taken the position that amplifier 115 of the Yoshida et al. reference can be considered an attenuator, because "the gain of amp 115 can be reduced (attenuated) or increased (amplified) between different levels...". However, this does not mean that amplifier 115 of the Yoshida et al. reference attenuates an input signal. For instance, amplifier 115 may in theory **amplify** a signal input thereto at a first level, and subsequent thereto **amplify** the same signal input thereto or another signal at a second lower level. However, regardless of the sequence of amplification levels, the input signal is amplified, not attenuated. Accordingly, even if the amplitude level was hypothetically adjusted from a higher level to a lower level as suggested by

the Examiner, the signal output from the amplifier would be an amplified version of the input signal. That is, amplifier 115 does not attenuate the level of a signal input thereto.

As also emphasized on page 7 of the Amendment dated July 9, 2003, and beginning on page 9 of the Amendment dated February 26, 2004, the prior art as relied upon by the Examiner does not appear to specifically recognize that echo noise mixed with sending signals may have comparatively very high amplitude, due to microphone or loud speaker volume, and that the amplitude of the echo noise may greatly exceed the amplitude of the pseudo echo noise. In such a case, the echo noise mixed within the sending signals cannot be eliminated using the pseudo echo noise, because the amplitude of the echo noise is too great. Applicants respectfully note that the Examiner has not specifically established that the prior art references recognize this problem, and that the prior art particularly controls attenuation of sending signals responsive to this problem. This should be especially clear, because element 115 in Fig. 1 of the Yoshida et al. reference is an amplifier, not an attenuator. The Yoshida et al. reference as relied upon by the Examiner does not consider or suggest attenuation. The mere suggestion by the Examiner that there is "a great possibility and obviously" that controller 113 of the Yoshida et al. reference controls amplitude of the signal produced by element 115, does not change the fact that element 115 is an amplifier, not an attenuator.

Accordingly, Applicants respectfully submit that amplifier 115 of the Yoshida et al. reference does not attenuate the output of microphone 114 "so that an amplitude level of the echo noise matches an amplitude level of the pseudo echo signals", as

alleged by the Examiner. Applicants therefore respectfully submit that the echo canceller of claim 5 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection of claims 5-7 is improper for at least these reasons.

Claims 8-10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Takada et al. reference in view of the Yoshihama et al. reference (Japanese patent publication No. 8-279777). This rejection is respectfully traversed for the following reasons.

The Examiner has acknowledged that the Takada et al. reference does not teach an amplifier that is used to amplify pseudo echo signals so that the amplitude level of the pseudo echo signal is matched to that of the echo noises. In order to overcome this acknowledged deficiency of the Takada et al. reference, the Examiner has alleged that the Yoshihama et al. reference teaches an echo canceller that includes an adaptive digital filter, for eliminating echoes.

In the English language abstract of the Yoshihama et al. reference, amplifier 13 is described as adjusting "by the amplitude ratio" the correspondent data in the ring buffer 12. The English language abstract of the Yoshihama et al. reference does not describe amplifier 13 as amplifying "the pseudo echo signals so that an amplitude level of the pseudo echo signals matches an amplitude level of the echo noise", as would be necessary to meet the features of claim 8. Moreover, the English language abstract of the Yoshihama et al. reference as relied upon by the Examiner does not recognize that

echo noise mixed with sending signals may have comparatively very high amplitude, due to microphone or loud speaker volume, and that amplitude of the echo noise may greatly exceed the amplitude of the pseudo echo noise. The English language abstract of the Yoshihama et al. reference does not recognize the above noted problem, and does not particularly control attenuation of sending signals responsive to this problem.

The Examiner is respectfully directed to Manual of Patent Examining Procedure section 706.02. As set forth, when an English language abstract of a foreign patent document that is not in the English language is used to support a rejection, the evidence relied upon is the facts contained in the abstract, not additional facts that may be contained in the underlying full text document. As further set forth, if the document is in a language other than English and the Examiner seeks to rely on that document, a translation must be obtained so that the record is clear as to the precise facts the Examiner is relying upon in support of the rejection. This is important, because the full text document may include teachings away from the invention that would preclude an obviousness rejection under 35 U.S.C. 103, when the abstract alone appears to support a rejection.

As noted above, the English language abstract as relied upon by the Examiner does not particularly teach that amplifier 13 "amplifies the pseudo echo signals so that an amplitude level of the pseudo echo signals matches an amplitude level of the echo noise". Since the English language abstract does not disclose or teach these features, and since it is unclear what the full text document of the Yoshihama et al. reference

teaches in absence of a full translation, this rejection is improper. Accordingly, Applicants respectfully submit that the echo canceller of claim 8 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection of claims 8-10 is improper for at least these reasons.

Allowable Subject Matter

Applicants respectfully note the Examiner's acknowledgment that claims 11-13 are allowed.

Conclusion

The Examiner is respectfully requested to reconsider and withdraw the corresponding rejections, and to pass the claims of the present application to issue, for at least the above reasons.

In the event that there are any outstanding matters remaining in the present application, please contact Andrew J. Telesz, Jr. (Reg. No. 33,581) at (703) 715-0870 in the Washington, D.C. area, to discuss these matters.

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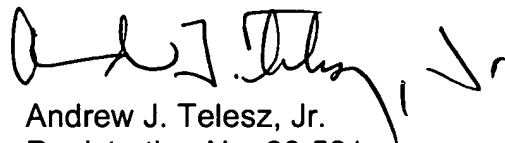
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Request for Reconsideration dated June 21, 2004

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment for any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0238.

Respectfully submitted,

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